

REMARKS

Claims 1-6 are pending in the application. Claims 1-6 stand rejected. Claim 1 is an independent claim.

Applicant wishes to thank the Examiner for indicating that claim 5 is allowable if amended to an independent claim incorporating all features of the base and intervening claims. At this time, applicant wishes to defer rewriting claim 5 to an independent claim.

Claim 1 stand rejected under 35 U.S.C. '103(a) as allegedly being obvious over Williams (U.S. 5,864,416) in view of Chorey *et al.* (U.S. 6,163,709) ("Chorey"). Applicant respectfully traverses the rejection.

Claim 1 recites, *inter alia*, "...clock/data recovery circuit for reproducing a clock signal and data from the amplified electrical signal in accordance with a control signal and outputting the reproduced clock signal and data..."

As noted in the claim, the clock/data recovery circuit reproduces a clock signal and data in accordance to a control signal from the controller. The control signal is described to be determined by a bit-rate that corresponds to the voltage level of the recognition signal, while the recognition signal comprises the sensing signal that is further amplified. It is disclosed that the sensing signal contains a voltage level determined on the basis of a bit rate of the electrical signal. Accordingly, claim 1 describes an optical receiver that includes a clock/data recovery circuit which outputs a **clock-signal and data based on the sensing signal with a voltage level determined on the basis of a bit rate of the electrical signal.**

Williams, as read by applicant, discloses a tuning optical communications receiver that uses the data rate of the received signal known either a priori, or extracted by the phase lock loop of clock recovery circuit (Column 3, line 66 – column 4, line 2). However, nowhere in Williams

is there a disclosure that William clock/data recovery circuit outputs a clock-signal and data based on the sensing signal with a voltage level determined on the basis of a bit rate of the electrical signal. Instead, William discloses that its clock/data recovery outputs clock-signal and data based on a digital code previously stored in microcontroller (Column 3, line 60 – column 4, line 21 (indicating that the clock recovery circuit operates by receiving instruction based on digital codes previously stored in the microcontroller)). Applicant respectfully submits that a clock recovery circuit that outputs a clock-signal and data based on a digital code previously stored in microcontroller is structurally different from the clock/data recovery circuit that outputs a clock-signal and data based on the sensing signal with voltage level determined on the basis of bit rate of the electrical signal, as disclosed in claim 1.

Chorey, as read by applicant, discloses a cellular phone with a logarithmic detector. However, Chorey fails to disclose a clock/data recovery circuit. Accordingly, Chorey and Williams, alone or in combination, fails to show or teach the clock/data recovery circuit that outputs a clock-signal and data based on the sensing signal with voltage level determined on the basis of bit rate of the electrical signal, as specifically cited in claim 1.

Moreover, claim 1 recites, *inter alia*, a controller that determines “a bit rate corresponding to a voltage level of the recognition signal by referring to a look-up table defining a predetermined relationship of the bit rate to the voltage level, and for providing the clock/data recovery circuit with the control signal representative of the bit rate.” The claim refers to a controller that (1) performs calculation on the voltage level of the recognition signal to determine the bit rate, (2) determines a bit rate, and (3) generates a control signal representative of bit rate, bit rate that is related to the voltage level of the recognition signal (See page 11, line 4-9).

Such a controller is not found in Williams. First, the microcontroller, as disclosed in Williams, does not perform calculation on the voltage level of the recognition signal to determine the bit rate. Instead, Williams shows a microcontroller that performs a look-up of the previously stored calibration table and/or perform interpolation on code values stored in the calibration tables (Column 5, line 1-2). Second, William microcontroller does not determine the bit rate. Instead, the bit rate embedded in the received signal is determined by the clock/data recovery circuit (Column 3, line 66 – column 4, line 6; column 4, line 66 – column 5, line 2). Third, Williams fails to disclose that its microcontroller generates a control signal representative of bit rate that is related to the recognition signal, as recited in claim 1. Instead, William teaches that its microcontroller merely generates a digital code that is representative of a control voltage based solely on previously stored code values (Column 4, line 10-15; column 5, line 1-2).

Meanwhile, Chorey fails to disclose a controller, much less a controller that performs calculation on the voltage level of the recognition signal, that determine a bit rate and generate a control signal representative of bit rate, as recited in claim 1.

Accordingly, applicant respectfully submits that the controller as disclosed in Williams and Chorey does not (1) performs calculation on the voltage level of the recognition signal, (2) determine a bit rate, and (3) generates a control signal according to the voltage level of the recognition signal. Therefore, the controller is structurally different from and does not anticipate the controller described in claim 1.

For all foregoing reasons, applicant respectfully submits that Williams and Chorey, alone or in combination, fails to show or teach the clock/data recovery circuit and the controller

described in claim 1. As such, Williams and Chorey, alone or in combination, fail to anticipate and/or render claim 1 obvious.

The Office Action maintains the rejection over Williams and Chorey indicating that it has disregarded features following the propositions “for,” as such features are merely recitations of manner by which the claimed invention is *used* (Id., at paragraph 5). Accordingly, the Office Action deems claim 1 to merely include feature of opto-electric converter, an amplifier circuit, a bit rate-sensing circuit, a bit rate-recognition circuit, a clock/data recovery circuit, and a controller; the features which the Office Action alleges to be expressly recited or inherently taught by functional language of Williams (See id.). As such, the Office Action maintains the rejection under the rationale that if the prior art structure is capable of performing the intended use, then the prior art teaches the claim. The Office Action cites to *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 136 USPQ 458 (CCPA 1963) as support.

Applicant respectfully traverses the Office Action’s finding that features following the preposition “for” are merely recitation of how the claimed invention is *used* and that such features must be disregarded. Applicant submits that such features are functional features that serve to further define the type of features preceding the preposition, and not merely features directed toward the manner by which the recited invention is used. For example, claim 1 recites, *inter alia*, “a controller for determining a bit rate corresponding to a voltage level of the recognition signal...” The features following the preposition “for” defines the inventive controller as a type of controller which determines the bit rate corresponding to a voltage level of the recognition signal, thus distinguishing present controller from the type that does not determine the bit rate.

According to the United States Court of Appeals for the Federal Circuits and its predecessor, the Court of Customs and Patent Appeals, such functional features cannot be ignored and must be given weight in determining patentability (*In re Atwood*, 354 F.2d 365, 148 USPQ 203, 210 (CCPA 1966) (“We have here a combination claim at the limitations ignored by the board as use limitation we think are functional expressions which must be given weight”); *In re Mills*, 916, F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)). If the functional features distinguishes the claim from prior art, the claim is patentable (See *Id.*; see also *In re Zurko*, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir.), *aff’d en banc*, 142 F.3d 1447, 46 U.S.P.Q.2d 1691 (Fed. Cir. 1998) (reversing the rejection by Board of Patent Appeals and Interference of a claim stating that a specific functional feature is insufficient to patentably distinguish over prior art)).

Moreover, neither *In re Casey* nor *In re Otto* holds that functional features included in a claim should be disregarded. As such, neither *In re Casey* nor *In re Otto* supports the Office Action’s disregard for the present functional features. *In re Otto* deals with product-by-process claims; as such, the court did not hold that functional features in an apparatus claim are to be ignored (See *In re Otto*, 312 F.2d 937 (CCPA 1963)). In *In re Casey*, the issue before the court was whether a difference in type of materials which the claimed invention and prior art operate upon sufficiently distinguishes the claimed invention from prior art (See *id.*, at page 579-580 (stating that patent applicant’s sole argument in its appeal is that the fundamental difference between the claimed invention and the prior art is that the claimed invention operates on adhesive tapes while prior art operates on ordinary sheets)). The court held that difference in materials does not patentably distinguish the invention. However, the court did not set out a *per se* rule that functional features within a claim are to be disregarded when patentability of claim is

considered (See id.; see also MPEP 2115 (stating that *In re Casey* and *In re Otto* hold that **material or article worked upon does not limit apparatus claims**)).

Accordingly, applicant respectfully submits that current patent law does not prohibit consideration of patentably distinguishing functional features in a claim. On the contrary, the Federal Circuit and its predecessor hold, subsequent to *In re Casey* and *In re Otto*, that current patent law requires the Office Action to consider the functional features in a claim. Accordingly, applicant respectfully requests a reconsideration of claim 1 including any functional features. As noted above, such features, among others, are neither shown and taught in Williams and Chorey, alone or in combination, and undoubtedly render claim 1 patentable over the references. As such, applicant respectfully requests withdrawal of the rejection on claim 1.

Other claims in this application are each dependent on the independent claim 1 and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

For all of the foregoing reasons, it is respectfully submitted that the present Application is patentable in view of cited reference. A notice to that effect is respectfully solicited. If any issues remain which may be best resolved through a telephone communication, the Examiner is requested to kindly telephone the undersigned telephone number listed below.

Respectfully submitted,

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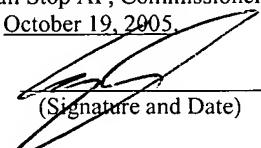
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